

The caterpillars have the anal claspers replaced by a single projection, have fourteen feet and make a cocoon between the leaves, and are probably double brooded, the pupa of the second brood hibernating. I have described the larva of *Dryopteris*: an allied genus has been described by Walker, from Japan, which I have not been able to compare critically with our two North American species of *Dryopteris*. Mr. Henry Edwards records the European *Frionia lacertinaria* from Canada, and it seems that we have a second species in the *Prionia bilineata* of Packard. We have two species of *Platypteryx* Lasp. (= *Drepana* Schrank) from the east, the one more whitish, Walker's *arcuata*, the other more of a buff yellow, my *genicula*. The European genus *Cilix* of Leach, is apparently absent in our fauna. In the shape of the wings this little group resembles the following *Attacinae*, if we may compare such frail species with the giants of the family. The neuration shows also some approach to the typical Bombyces. The hind wings have eight veins, but the inner of the two internal veins is incomplete; vein five is nearer to four than to six. The fore wings are twelve veined, and a certain look of miniature Attacids is due to the conformation of the wings. We have a Geometrid genus *Drepanodes*, which, with its pointed primaries, looks like *Platypteryx*, and it is possible that Stephens has so mistaken the species.

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STRAY NOTES ON MYRMELEONIDÆ, PART 5.

BY DR. H. A. HAGEN, CAMBRIDGE, MASS.

*Dendroleon pantherinum* Fabr.

*Myrmeleon pantherinum* Fabr., Mantissa, 249. 3—Ent. Syst. ii., 93, 3—Brauer Neur. Austr., 64.

*Myrmeleon ocellatum* Bork. in Scriba. Beitr. ii., 165, pl. 11, f. 5.

*Dendroleon pantherinum* Brauer, Wien. Z. B. G. xvii., 963. pl. 14, f. 3.

The species was described (1787) by Fabricius, from a specimen wanting prominent parts, antennæ and legs. The descriptions by Villers, Olivier, Gmelin, Latreille and Walker, are simply copies.

Borkhausen, in 1791, described the same species as *M. ocellatum*, from a specimen found in Darmstadt, Hesse. The description and figure are good, and Burmeister believed the N. American species to be identi-

cal. Prof. Brauer has given a new description in *Neur. Austriaca*. The species is a very rare one, found, besides in Austria and Hesse, fifty years ago in Silesia and Hungary. The discovery of the larva in the Prater, near Vienna, on trees, and the raising of the imago by Prof. Brauer is one of his numerous splendid discoveries. He made for the species the new genus *Dendroleon*. Both species are recorded as *Glenurus* Hag. in my Synopsis Hemerob. This genus was proposed exactly at the same time with *Dendroleon*, but the latter one should be retained for those species.

The N. American species and the European are very similar, but the rarity of both prevented the exact knowledge of their differences. I have seen of the European species only three specimens, one from the Rhein Mus. Berol., one from Austria, and one from Hungary in Frivaldsky's collection. The latter one I have compared carefully with Burmeister's types in Winthem's collection in 1852. As since this time nothing is published about the differences of both species, I give here my manuscript notes.

*D. pantherinum* is of the same size, but a little more robust; prothorax plain-luteous, without the fine black granulation of *D. obsoletum*; a large black dorsal band on metathorax and basal segment of abdomen; *D. obsoletum* has mesothorax, metathorax and basal segment above in the middle only with a very dilute blackish color. Abdomen with segment second and third black, the fourth and fifth above light brown; *D. obsoletum* has on all segments, or at least on second and third, a transversal yellow band. Legs yellowish brown; fore legs with a ring around the apex of femur, middle of tibiæ, and third and fourth joint of tarsus all black; middle and hind legs with a broad dark ring before the middle of femur, which is externally nearly connected with the apical ring; the apex of tibia and a median ring, which is wanting on hind legs, black. The coloration of *D. obsoletum* is very different, as stated in the description. Wings with the venation less close, the areoles larger; veins in both wings more fuscous; front wings in the basal third of the space between fourth and fifth longitudinal vein with four fuscous spots, the most apical one longest, about 3 mm. (wanting on *D. obsoletum*); the ocellate spot on the hind margin is complete (*D. obsoletum* wants always the apical half of the iris around the spot); hind wings with a quadrangular (round in *D. obsol.*) spot near the costa, and ring of spots on the apex of hind margin.

*Dendroleon obsoletum* Say.

*Formicaleo obsoleta* Say., Journ. Acad. Philad. viii., 44, 1—Say, Ed. Lec. ii., 413, 1.

*Myrmeleon obsoletus* Hag., Syn. N. Am. Neur. 225, 2.

*Myrmecoleon ocellatus* Burm. ii., 995, 1—Walk. 401, 172.

*Myrmeleon nigrocinctus* Rbr. 398, 20—Walk. 361, 101—Glover Ent. Amer. Neur., pl. v., f. 15 (the figure is a fair one).

Body slender, abdomen little villous. Head narrow, face luteous, between the eyes a broad shining black band, notched on the inferior margin; vertex luteous; antennæ as long as head and thorax, slender, elongated, clavate on tip, blackish fuscous, pale in middle; palpi short, pale; maxillary ones with the three apical joints equal; labials not longer, apical joint fusiform; prothorax elongated, narrower anteriorly, luteous, faintly granulated with black; thorax dull luteous, above darker; on each side above the legs a broad black longitudinal band; below pale; abdomen shorter than the wings (I believe I have not seen a male), blackish brown, with a yellow dorsal, transversal band on the middle of each segment, or at least on the second; the parts in the last segment light brown, with black hairs; above split longitudinally; below on each side a short, flat appendage; legs very long and slender, with short hairs, shining black; anteriors with base of femur and tip of tibia brown; hind legs with a luteous band before the tip of femur, or luteous, tip black; tibia pale, black on tip and after base; or black, pale at base; tarsi long, black; the basal joint sometimes luteous; spurs luteous, as long as the two basal joints; apex incurved; claws luteous; wings hyaline spotted with fuscous; front wings with the inner half of an ocellate spot on the middle of the hind margin; a double spot at the pterostigma, an apical interrupted series, and some dots along the mediana; hind wings with a larger orbicular spot before the pterostigma, and some spots near the tip and the apical part of the hind margin; venation white, some of the forks and the longitudinal veins interrupted with fuscous. Length of body, 20 to 26 mm; exp. al., 46 to 67 mm.

Mr. Sanborn, Mass. Agric. Rep., 1862, p. 161, states:—"Specimens of this insect are sometimes found which differ either with the wings not spotted, but hyaline or sprinkled with fuscous, or costal space with a double series of areoles, or without spurs." Apparently Mr. Sanborn has here confounded several species.

Habit.—Canada, Ontario, Mr. Saunders; southern peninsula of Michigan, Mr. Harrington; N. Hampshire, Mr. Leonard in T. W. Harris's coll. There is a very indifferent figure of Harris's specimen by F. J. Sanborn (it is reproduced in Dr. Packard's Guide, f. 604), in his Rep., 1862, Mass. Agric., p. 160. Mr. Sanborn, who had a most general and reliable knowledge of insects in this country, says:—"It is of common occurrence throughout the country, and this is the only well-known antlion in N. England." But I have to state that Harris's specimen is till now the only one from N. England seen by me; N. York, in Winthem's coll. and by Mr. Akhurst; Missouri, St. Louis, Mr. Engelmann; Illinois, Galena, Mr. Bean; Maryland, Mr. Uhler; N. Carolina, Morganton; S. Carolina, Aiken; Virginia; Georgia, June 7 and August 21, in pine woods, rare, in Abbott's figures in the Brit. Museum; Alabama, figured by Mr. Gosse in his letters from Alabama, p. 242 (I have not seen this book); Liskiyou, Cala, Mr. Behrens. Mr. Th. Say states only, "this species is rather common."

The range of this species is very large, and probably a larger one to the south and west. The size is not very variable, except one specimen from South Carolina, and one from Cala., to which belong the smallest given dimensions. Very probably the larva ascends trees as the related European species; and the larva from Washington, D.C., described by me years ago, probably belongs to this species. (Stett. Ent. Z., 1873, p. 271, n. 7.)

*Myrmoleon immaculatus* De Geer.

*M. immaculatus* De Geer iii., 564 (365), pl. 27, f. 8—Retzius 59, No. 202—Walker 401, n. 174.

*M. melanocephalum* Oliv. Encycl. viii., 127, No. 33.

*M. immaculatus* Hag., Syn. N. Am., 231, 14, partim.

Face shining, black; epistom and mouth yellow; the black color covers sometimes more or less the epistom, notched anteriorly; a fine yellow ring around the eyes, more or less interrupted near the antennæ, and enlarged below near the mouth.

Labrum short, twice as broad as long, rounded laterally, largely notched anteriorly.

Palpi light brown, darker in more adult specimens; maxillary moderately long; thin cylindrical; three apical joints sometimes black, with a

small yellow basal ring ; last joint cylindrical, truncate on tip ; labial about as long, second joint arcuate, thin, enlarged on tip ; last joint of the same length, subarcuate, largely fusiform above, shining black, tip thinner, yellow.

Antennæ a little shorter than head and thorax, clavate, dull black, more or less annulate with yellow, basal joint above yellow, below the basal joints shining black.

Head broad ; vertex transversally ovoid, elevated ; anteriorly finely rugose ; a number of very fine elevated lines originating together between the antennæ, and then diverging ; the color and pattern of the vertex varies much ; the main color is dull black, with a yellow transversal band, which is entire or more or less divided and may be wanting entirely ; two pitchy black transversal bands are divided by a middle longitudinal band, consisting of two anterior and two posterior approximate twin spots, all these pitchy black shining flat spots and bands may be differently shaped ; besides there is on each side near the eyes on the vertex a posterior linear flat spot, and another behind this on the occiput ; the yellow transversal band fills the space between the two pitchy black bands, and is always interrupted in the middle by longitudinal band ; the yellow band is entirely wanting in the N. England, Michigan and N. York specimens, it is more or less indicated in the specimens of the Southern States, and always present in the Western States and Colorado.

Prothorax short, nearly once broader than long ; sides about straight ; front margin semi-circular, dull brown ; the front margin, two large spots on the part before the transverse sulcus, and two smaller ones after the sulcus, and the membrane between the prothorax and mesothorax luteous or yellowish ; some black hairs on the sides of prothorax ; thorax pitchy fuscous to black above and below ; the margins sometimes a little luteous

Abdomen of female much shorter than the wings ; of the males less shorter and more slender ; pitchy black ; the basal half principally of the females or newly transformed specimens with a large dull luteous spot, covered with short and fine whitish villosity.

Female genitals the same of *M. mobilis*, but the black appendages a little shorter and thicker, with very long black hairs ; male genitals similar, but the spoon-shaped part a little shorter.

Legs of the Southern specimens similar to *M. mobilis*; the specimens from the Northern and Eastern States and the Rocky Mts. much more black; the anterior tarsi and larger parts of tibia entirely shining black, but all intermediate colors are to be found; spurs and sometimes the claws brown.

Wings similar, variable in size, shape and coloration; the most striking difference is the hind margin of the hind wings, which is never (in 30 specimens) sinuate in the apical half, but performs a flattened curve, a little more incurved on tip; the mediana and subcosta are darker and the space between them is blackish, where they are not interrupted with yellowish; sometimes the transversals below the mediana and some other veins are fumose; pterostigma white.

Length of body, 25 to 36 mm.; exp. al., 60 to 76 mm. Breadth of hind wing, 5 to 7 mm. The smallest specimens are from Colorado.

Habitat.—30 specimens male and female are before me; Ludington, Mich., Mr. Pierce (raised); Keene, N. H., Mr. F. H. Foster (raised); Peabody, Mass., Mr. G. H. Emerton (raised); Albany, N. York (raised by myself); Maryland, Mr. Uhler; Virginia, Alleghany Mts., and Washington, D. C., O. Sacken; Morganton, N. Carolina, Mr. H. Morrison; Waco, Texas, Mr. Belfrage; Denver, Golden City, Manitou, Colorado, by O. Sacken; Wasatch Mts., Utah, Rocky Mts. Dr. Anderson; Lake Tahoe, Cala., O. Sacken; Sylvania, Cala., Mr. Ricksecker (raised); Oregon, Mr. H. Edwards; Washington Terr., Yakima River, Mr. S. Henshaw.

The imago appears everywhere in June and July. The larva hibernates and transforms in the pupa about May.

The description and the figure by De Geer, though both not sufficient, proved that his species was the one here described; there is no N. American species known, which makes this determination doubtful. There can be no doubt that *M. melanocephalum* Oliv. is the same species. Olivier's specimen was collected by Bose near New York, De Geer's in Pennsylvania. Burmeister's type, now before me, is *M. mobilis*. It would be useless to speak about two species described by Walker, without comparing his types. The same applies to Prof. Taschenberg's species.

When I published the Synopsis N. Am. Neur., I knew only three specimens, which are still before me. I had them separated in two

species, but the insufficient material seemed to make it more prudent to unite them provisionally. Both species are very similar, and the only palpable difference is the hind margin of the hind wings sinuated in the apical half of *M. mobilis*, and convex in *M. immaculatus*. I have raised myself both species, and have the full grown larvæ in alcohol.

(To be Continued.)

## THE CHALCID GENUS RILEYA.

BY L. O. HOWARD, WASHINGTON, D. C.

An interesting interference in the adoption of the generic name *Rileyia* has recently taken place between Mr. Ashmead and myself, and, as I am of the opinion that this name should apply to the genus of Encyrtinæ defined by myself, rather than to the genus of Eurytominae defined by Mr. Ashmead, I state in this note the circumstances of the interference, and print in full the paper in which my description occurred.

At the meeting of the Entomological Society of Washington, held June 7, 1887, I read the paper in question and handed the manuscript, after reading, to Mr. Smith, the Secretary, with the request that he publish the generic description in full in his abstract of our proceedings in *Entomologica Americana*. June 9 this periodical for June was received, and I found upon reading Mr. Ashmead's "revised generic table of the Eurytominae," published upon pages 41 to 43, that he had decided to use the same name for a genus of that sub-family. The name is there given, *not as a new genus*, but as one already described, and the few words given to it in the table fail to sufficiently characterize it. Noting these points, I did not recall my description from Mr. Smith, and it was published in the July number of the same periodical (received July 5). I inferred from the fact that Mr. Ashmead entered the genus as "*Rileyia* Ashm.," and not "*Rileyia* n. g.," that his description had been sent away for publication, but had not appeared, and this inference was shown to be correct when upon July 14, first copies were received of Bulletin No. 3 of the Kansas Experiment Station, which contained in an appendix Mr. Ashmead's full description of this genus.

I am individually inclined to think, therefore, that as Mr. Ashmead